How to Make a Difference at Your School

A guide to starting environmental programs in middle and high schools

Green Steps

Dear Educator

As educators at the middle and high school level, you have the chance to either provide students with their first lesson about environmental responsibility or build on previous experiences. At this level, your students are learning lessons they will carry with them for a lifetime and will begin considering future career choices. Involving students in waste minimization programs will open their eyes to the impact their actions make on both the environment and their community. By participating in pollution prevention and waste minimization programs, like recycling or waste tire reuse programs, schools not only help Indiana's environment, but can often times save or even earn money! This brochure is designed to assist your school in starting and operating successful waste minimization programs. In this brochure, you will learn how to operate a variety of programs, how to get funding for them, and learn about participating existing programs.

Watershed

Everyone lives in a watershed. Houses, schools, cities—even entire states—are located within them. Watersheds are simply areas of land that accumulate runoff from rainfall or melted snow and then carry that runoff into a larger body of water, like a river, stream or ocean. Runoff from parking lots, construction sites and other areas can often pollute watersheds. When this happens, bodies of water needed for drinking, fishing, swimming, and other uses, become threatened. Pollution in watersheds comes from either point source pollution or nonpoint source pollution. Point source pollution is easier to manage because the source of pollution is known. Nonpoint source pollution is more challenging to manage.

Watershed projects help control nonpoint source pollution through monitoring and cleanup activities. Schools can get students involved in watershed projects on school property or by teaching pollution prevention, cleanup techniques and discussing the relationship between land use and water quality. Participating in watershed activities helps keep water clean for everyone.

Existing Programs and Resources

Hoosier Riverwatch: Hoosier Riverwatch is a state-sponsored water quality monitoring program, under the Indiana Department of Natural Resources, which provides education and training on watersheds and the relationship between land use and water quality. Hoosier Riverwatch increases public awareness about water quality issues and promoted stewardship by training volunteers to monitor the quality of Indiana stream water. To learn more about Hoosier Riverwatch, visit their Web site, at www.IN.gov/dnr/riverwatch.

Adopt-A-River: Adopt-A-River (AAR) is a Hoosier Riverwatch initiative, created for volunteer groups interested in cleaning up Indiana waterways. Groups which commit to cleaning up a half-mile stream segment, twice a year, for two years, To learn more about AAR, visit www.IN.gov/dnr/riverwatch/adoptariver.

Funding

Since working in a watershed involves many people, most grants are targeted towards larger organizations that bring people together to help plan and do things to improve water quality in your watershed. To get involved in local watershed planning, schools can contact their local Soil and Water Conservation District office to see who's doing work in the watershed. Schools can also contact IDEM's Section 319 Grant Program to find out how to help pitch in on creating a watershed plan or partnering to improve water quality by attacking nonpoint source pollution on the ground. To find out your local Soil and Water Conservation District office, visit the Hoosier Riverwatch Web site, at www.IN.gov/dnr/riverwatch/watersheds.

For information about IDEM's watersheds and other water quality-related programs, please contact IDEM's Office of Water Quality at (317) 233-2481, or visit the IDEM Web site, at www.IN.gov/idem/programs/water/wsp .

Setting Up a Program at Your School

- Use a proper pesticide setback. Observe a buffer zone to keep pesticide runoff from entering rivers, streams or ponds on school property.
- Fertilize grassy areas and use proper mowing practices.
- Mulch leaves that fall to the ground.

What students can do:

- Participate in the Adopt-A-River program, from Hoosier Riverwatch and the Indiana Department of Natural Resources.
- Plant and operate a rain garden, which can beautify school grounds and provides a habitat for wild life. For more information, visit the IDEM Web site, at www.IN.gov/idem/catalog/documents/water/iwpg.pdf.

Most of the pollutants entering our waters come from runoff from fields and streets.

Idle-Reduction

When school buses and cars idle excessively, they create an unnecessary amount of fine particle pollution in the form of exhaust. Particle pollution, also known as fine particulate matter (PM), can cause serious health problems like bronchitis or asthma when it is breathed in over a long period of time. Schools can take steps to reduce student exposure to diesel exhaust and reduce the amount of PM buses produce by enforcing a no-idling policy.

Schools that have no-idling policies save money on fuel and maintenance costs and reduce wear-and-tear on engines. Plus, taking steps to reduce idling means taking steps to help keep our air clean and keep students and staff healthy!

Existing Programs and Resources

DieselWise: The Indiana Department of Environmental Management (IDEM) has teamed up with the Student Transportation Association of Indiana (STAI) to introduce this voluntary no-idling program for Indiana schools and other entities. DieselWise aims to reduce diesel emissions through education, the use of retrofit technology, and cleaner fuel alternatives. DieselWise provides schools with a plethora of informational resources to help them achieve this goal, including tips for starting a no-idling program, idling facts and myths, existing Indiana initiatives, and much more. Learn more about DieselWise by visiting the IDEM Web site, at www.idem.IN.gov/programs/air/dieselwise.

Clean School Bus USA's National Idle-Reduction Campaign: This newly launched public information campaign from the U.S. Environmental Protection Agency focuses on idle-reduction as an easy way for schools to save money by conserving fuel, reducing wear-and-tear on engines, protecting drivers' health and the health of children, and improving air quality. The National Idle-Reduction Campaign offers many valuable resources including: an idling calculator, an idle-reduction kit, information about emission reducing technologies, a list of idling myths, several pieces of literature, and a teacher's guide, including curriculum and activities. Learn more about Clean School Bus USA by visiting the U.S. EPA's Web site, at www.epa.gov/cleanschoolbus/antiidling.

Funding

Funding is available for Indiana schools through the U.S. EPA's Midwest Clean Diesel Initiative for projects designed to retrofit and/or replace existing school buses. Schools interested in applying for funding should contact the U.S. EPA at (734) 214-4780 or via email at CleanSchoolBusUSA@epa.gov, to be notified of new funding information as it becomes available. Learn more about the U.S. EPA's Midwest Clean Diesel Initiative, at www.epa.gov/midwest-cleandiesel.

Setting Up a Program at Your School

- Establish no-idling policies for both buses and cars in the pick-up/drop-off line.
- Work with bus companies to ensure no-idling policies are adopted.
- Minimize the time that children spend outside when school buses are arriving or departing.
- If possible, shorten commute times for children.
- Discourage drivers from following directly behind other large vehicles, including school buses – especially if they see visible smoke being emitted.
- Deploy the cleanest fleet buses for the longest bus routes.
- Post no-idling signs on school grounds.
- Provide a space inside the school
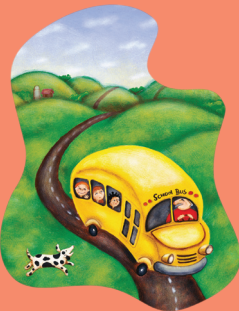
Minimize children's exposure to diesel exhaust by implementing a no-idling zone.

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> "Ask your parents to buy drinks in aluminum containers instead of plastic since aluminum is easier to recycle."

where drivers can wait on cold or warm days. Eliminate idling of delivery vehicles on school grounds.

- Develop educational programs for students about air pollution.
- Park buses away from the air-intake vents of the school building.
- Park buses diagonally to prevent back-to-front transfer of emissions.

What students can do:

- Study the environmental and health impacts of idling and make a presentation to school officials and bus drivers about reducing school bus idling.
- Make and post no-idling signs inside the school and on the bus.
- Tell parents not to idle in the student pick-up/drop-off area.

Recycling

Schools have a tremendous opportunity to reduce waste through recycling. Kids are fantastic recyclers! Utilize their enthusiasm to start a recycling program. Think about what a huge contribution your school could make if it merely recycled the paper, plastic bottles and aluminum cans used every day! Recycling helps reduce open burning, an illegal practice in Indiana, which causes air pollution. Starting a recycling program can be simple and inexpensive if done properly. For example, schools can perform an annual recycling drive for seasonal items, like phone books or Christmas trees, or establish an ongoing program to recycle any combination of materials including: plastic, glass, aluminum and paper.

There are many benefits to recycling. Recycling helps prevent the emission of many greenhouse gases, reduces the need for new landfills and incinerators, and saves energy. Plus, recycling saves school money by not throwing away so much, less trash = less hauling disposal costs. Your school can even make money by selling recyclables to solid waste management districts or recycling companies. When schools recycle, students learn an important lesson about the impact they have on their environment.

Existing Programs and Resources

RECYCLE INDIANA: Recycle Indiana is an online informational guide about recycling and reuse oppor-

tunities in Indiana. Here, schools can find information about funding, solid waste management districts, links to IDEM educational resources, an array of recycling topics, and several online publications and links. There is even an interactive tool, called Measure Your Impact, which calculates how much recyclable material is wasted every year in Indiana, based on an amount the user enters. Learn more about resources available to your school by visiting the Recycle Indiana Web site, at www.recycle.IN.gov. To go directly to the Measure Your Impact tool, visit www. recycle.IN.gov/topics/impact/index.html.

WASTEWISE: Schools can participate in this free, voluntary waste reduction program operated by the U.S. EPA. The goal of WasteWise is to minimize waste by partnering with organizations, such as schools, to develop and implement individually tailored waste reduction programs. Through WasteWise, your school will have access to: waste assessments, employee education, program maintenance and tips for tracking your school's progress. Waste-Wise also provides free technical assistance, a toll-free helpline and publicly recognizes successful partners. Schools can also find publications regarding how to start or expand an existing recycling program and how to make sure that program is a success. Learn more about WasteWise by visiting the U.S. EPA's Web site, at www.epa.gov/ wastewise/about/benefits.htm.

Funding

Funding is available for schools to start recycling programs through the Indiana Recycling Grant Program. Schools interested in applying for a recycling grant should contact their regional grant representative. To find out who your regional grant representative is, visit the Recycle Indiana Web site, at www.IN.gov/ recycle/funding/regions.html.

School corporations, both public and non-public, are also eligible for the Recycled

Product Purchasing Grant. The Recycled Product Purchasing Grant promotes markets for recycled-content products and reused products by encouraging the purchase of these products. This practice helps build confidence in the purchase of recycled-content products. To learn more about the Recycled Product Purchasing Grant, visit the Recycle Indiana Web site, at http://www. in.gov/recycle/funding/rppg.html.

Setting Up a Program at Your School

- Conduct a one-time or periodic recycling drive.
- Conduct a waste assessment.
- Identify waste to be recycled.
- Organize a team to manage the recycling program.
- Work out a budget.
- Contact local authorities to ensure compliance.
- Establish a system for collecting and storing recyclable materials.
- Educate students about recycling and what they can do to help.
- Set recycling goals.
- Reward participants.
- Purchase school supplies made with recycled content.

Recycle or reuse everything you can. It takes more energy to make new products out of raw materials than to recycle them.

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What students can do:

- Sort trash into recycle bins.
- Track the amount of items recycled (by weight) to estimate the total amount of reduction of waste to landfill during a school year.
- Suggest the school start a recycling program. Students can even run it.
- Make presentations at school board meetings or to parent/teacher organizations about the results of the schools current recycling program or about the impact a recycling program could have.
- Talk with parents and school officials about the importance of recycling.
- Bring lunch in a reusable lunch box to reduce waste.
- Make recycling posters and hang them around the school.
- Use notebooks, paper and pencils made with recycled content.

Waste Tire Reuse

Did you know there are currently at least 275 million waste tires in stockpiles in the U.S., according to the U.S. EPA? Waste tire stockpiles are bad for communities because they can attract disease-carrying pests, become fire hazards and, if burned, pollute our environment. Since the cost of reducing stockpiles is greater than the value gained by properly disposing of them, stockpile owners do little to fund cleanups. Other means, like outside funding and creative reuse solutions, must be provided to manage this public health and environmental hazard.

The good news is that many middle and high schools are benefiting from waste tire reuse programs. Waste tires are being used to make running track material. Waste tires are ideal for running tracks because they increase the track's resiliency and decrease stress on student's legs. Waste tires are also gaining popularity as a soil additive for sports and playing fields. The rubber makes the ground more resilient, reducing the number of student injuries.

Existing Programs and Resources

RECYCLE INDIANA: Recycle Indiana is an online informational guide about recycling and reuse opportunities in Indiana. Here, schools can find details about IDEM's Waste Tire Recycling Grant. Learn more about Recycle Indiana by visiting www. recycle.IN.gov.

Funding

Funding is available to schools interested in participating in a waste tire recycling project through the IDEM Waste Tire Recycling Grant. This grant is designed to help start or expand waste tire recycling programs in Indiana and target new and innovative projects that reuse or recycle waste tires. To learn more about IDEM's Waste Tire Recycling Grant, visit the IDEM Web site at www.IN.gov/idem/resources/grants_loans.

Setting Up a Program at Your School

Waste tire reuse projects are going to be operated differently than other environmental programs for schools. The footwork for waste tire reuse projects will be carried out by administrators. Grant funds will help cover the costs of equipment, personnel, supplies, contractual and other direct costs that are integral to the project. Schools can request either a loan or grant application by visiting the Recycle Indiana Web site at www.recycle.IN.gov.

In Indiana alone, up to 6 million tires each year could be sent to landfills.

"If you compost five pounds of leaves or grass clippings you will prevent one pound of air pollution."

At least four pounds of lead is contained in each old computer monitor or television.

E-Scrap

The disposal of electronic products is rapidly becoming a serious environmental issue. Technological advances are quickly rendering formerly useful electronics obsolete. When items such as computer monitors, copiers, printers, televisions and batteries are thrown out, the toxic substances used in these products, like lead and mercury, can pose a risk to human health. Once these electronic products are ready to be discarded, they are referred to as "e-scrap." Schools produce a good deal of e-scrap and have a responsibility to dispose of it properly.

Instead of throwing out e-scrap, schools should sell, donate or recycle it. If electronic products are merely broken, fix and reuse them instead of throwing them out. If repair is not an option, donation is the next step. Donating electronics often benefits low-income citizens, keeps toxic waste out of landfills, and creates jobs for Hoosiers through refurbish shops. By donating or even recycling e-scrap, schools will save resources, like metal and plastic, used to create electronic products. This helps prevent companies from having

to mine for raw materials to be used in production. E-scrap can be donated to a thrift store, a used computer store, non-profit companies or other schools. E-scrap that cannot be repaired or donated will need to be recycled.

Existing Programs and Resources

PLUG-IN TO ECYCLING: The U.S. EPA's Plug-in To eCycling campaign's goal is to help organizations, such as schools, donate or recycle — "eCycle" — used electronics. This program provides schools with information on how and where they can donate or safely recycle used electronics and facilitates partnerships with communities, electronics manufacturers and retailers to promote shared responsibility for safe electronics recycling. Schools can find a list of other current donation and recycling programs on the Plug-in To eCycling Web site.

To learn more about Plug-in To eCycling, visit the U.S. EPA's Web site at www.epa.gov/epaoswer/osw/conserve/plugin.

It's free and easy to join!

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COMPUTER TAKEBACK CAMPAIGN: The Computer TakeBack Campaign offers information about computer manufacturers that operate computer recycling services, often free of charge. The Computer Take-Back Campaign offers tips for getting your school's electronic products recycled for free and information about the best way to sell used electronics. To learn more, visit the Computer TakeBack Campaign Web site at www.computertakeback.com.

Funding

Annual or periodic e-scrap collections are sometimes funded by solid waste management districts, retailers or other community entities. Schools may be able to find other organizations to manage collected e-scrap. These organizations would include brokers, processors, and not-for-profits. These organizations will reuse, resell or scrap materials for schools usually at no cost.

Setting Up a Program at Your School

- Before recycling or donating electronics, especially computers, remove personal information and data.
- Assess the amount and type of e-scrap your school has.
- Consider repair or upgrade.
- Explore reuse options, such as thrift shops, other schools or nonprofits.
- Select a recycler.
- Organize a drive to collect used electronics from the community to donate or recycle along with the school's e-scrap.
- Document your school's e-scrap disposal.

What students can do:

- Make and post signs to advertise a community e-scrap collection.

- Tell parents about the correct way to discard e-scrap. Encourage them to properly dispose of: keyboards, computers, cell phones, pagers, scanners, VCRs, DVD players, and televisions.

Composting

When schools throw away organic waste, they fill up landfills unnecessarily. One way schools can reduce waste in landfills is by composting. Composting is the same process that nature uses to nourish the forest floor when leaves and other organic materials fall to the ground and decompose.

Composting is the controlled biological decomposition of organic matter into a soil-conditioner, called humus. There are two ways schools can compost: composting and vermicomposting (also called worm composting). Vermicomposting is a great way to get students involved. When schools compost their organic materials, including materials like yard clippings and lunch scraps, they keep organic waste out of landfills. Because compost is a soil conditioner, schools can save money by using it in landscaping or gardening projects. Your school can even sell the compost to earn money for other environmental programs!

Existing Programs and Resources

RECYCLE INDIANA: Recycle Indiana is an online informational guide about recycling and reuse opportunities in Indiana. Here, schools can find information about composting and vermicomposting. Recycle Indiana also provides information about finding your local solid waste management district and Indiana's registered composting facilities. Learn more by visiting the Recycle Indiana Web site at www.recycle. IN.gov.

U.S. EPA COMPOSTING: The U.S. EPA is a great resource for composting information. Here, schools can learn basic composting information, the benefits of composting, laws and regulations regarding composting, how to set up a composting program, review frequently asked questions, and gain a host of resources for further composting tips.

For more information about the U.S. EPA's recommended composting practices, visit the U.S. EPA's Web site, at www.epa.gov/epaoswer/non-hw/composting

Funding

Composting is an inexpensive way schools can help our environment. Schools interested in starting a compost bin can brainstorm ways to fund the minimal amount of supplies needed. For example, schools could look for plastic bins to use in reuse shops or host a bake sale to raise money for supplies. Schools can also apply for an Indiana Recycling Grant to fund composting efforts. For more information about Indiana Recycling Grants, visit the Recycle Indiana Web site, at www.recycle.IN.gov/funding/irg.html.

Setting Up a Program at Your School

- Order worms and gather all other necessary supplies: plastic bin with lid, water, shredded newspaper, and a small amount of soil.

- Assemble the worm bins with the ingredients listed, demonstrating to the class as you do so. Let students help.

- Establish program goals. Decide what and how much organic material will go into the worm bin. Items that should go into the classroom worm bin are tea leaves, fruit peelings and vegetable scraps, coffee grounds, vacuum dust, crushed eggshells, lawn clippings (from grounds maintenance) and leaves.

- Clearly mark containers "garbage" and "compost" so students can more easily separate food scraps.

- Teach students about recycling and composting, and explain their role in helping our environment.

- Decide how to best use the valuable compost created. Schools can sell this or use it for gardening or landscaping, or even for potting soil in classroom plants.

What students can do:

- Help put the worm bin together.

- Make up the bedding by saving paper towels and fruit and vegetable wastes for worm bins.

- Check the bin and record data.

- Harvest the worms when it is time.

Students and teachers can also sell excess worms or even start an organics recycling program with the cafeteria.

School waste minimization programs help students to understand the impact their actions have on the environment. By allowing students to participate and see the results of their efforts, schools teach them a very important lesson—that they can make a difference! So, go ahead and decide which programs will work best at your school and help keep our planet beautiful and bountifulfor generations to come.

Success Stories

Today's world requires alternative, renewable and clean forms of energy. Wind and solar power are ways to address these demands. In Randolph County, Indiana, one teacher has found a way to bring these resources and learning together.

Union City High School was recently awarded a grant from the Indiana Department of Energy and added a one kilowatt wind turbine and solar panels as an alternative way to generate electricity for the school. The one kilowatt turbine, placed on a 100-foot tower, produces enough electricity, during peak times, to run ten, 100-watt light bulbs. The solar panels have been placed at ground-level so students can get hands-on training. Students can manipulate the solar panels to create various generating scenarios. then evaluate if the number of solar panels affects the amount of energy generated. This can be done by simply covering individual panels. Because Indiana weather is constantly changing, having a wind turbine and solar panels allows the students to conduct feasibility experiments to tell which type of alternative energy is the most appropriate for Indiana. The information gathered from the feasibility and other electricity studies will be posted

online so students can work with the numbers to learn where the electricity comes from.

The information gathered from the wind turbine project will be presented to the local electric company. Union City High School

has developed many projects since the installation of the solar panels and wind turbine. A new curriculum is being developed for students in math and the sciences and they are considering installing a wind farm to supplement consumer supply. The wind turbine project has inspired students and staff to look into future projects, like ethanol studies. They are also considering conducting some additional experiments in transportation energies.

The teacher hopes to create enthusiasm and interest in math and science. He said that the wind turbine project has sparked the interest of several local colleges and other organizations are now implementing their own projects. Schools interested in starting a wind turbine project should contact their local power company or the Indiana Department of Energy to learn about funding sources. Union City High School's project has been very well received by school district officials as well as students, parents and teachers By implementing projects like the wind turbine, schools promote interest in the use of renewable sources of energy.

For more information about the Union City High School wind turbine project and to see what other projects schools in your community working on, visit the Indiana Green Steps Program Web site, at www.IN.gov/idem/greensteps.

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(800) 451-6027